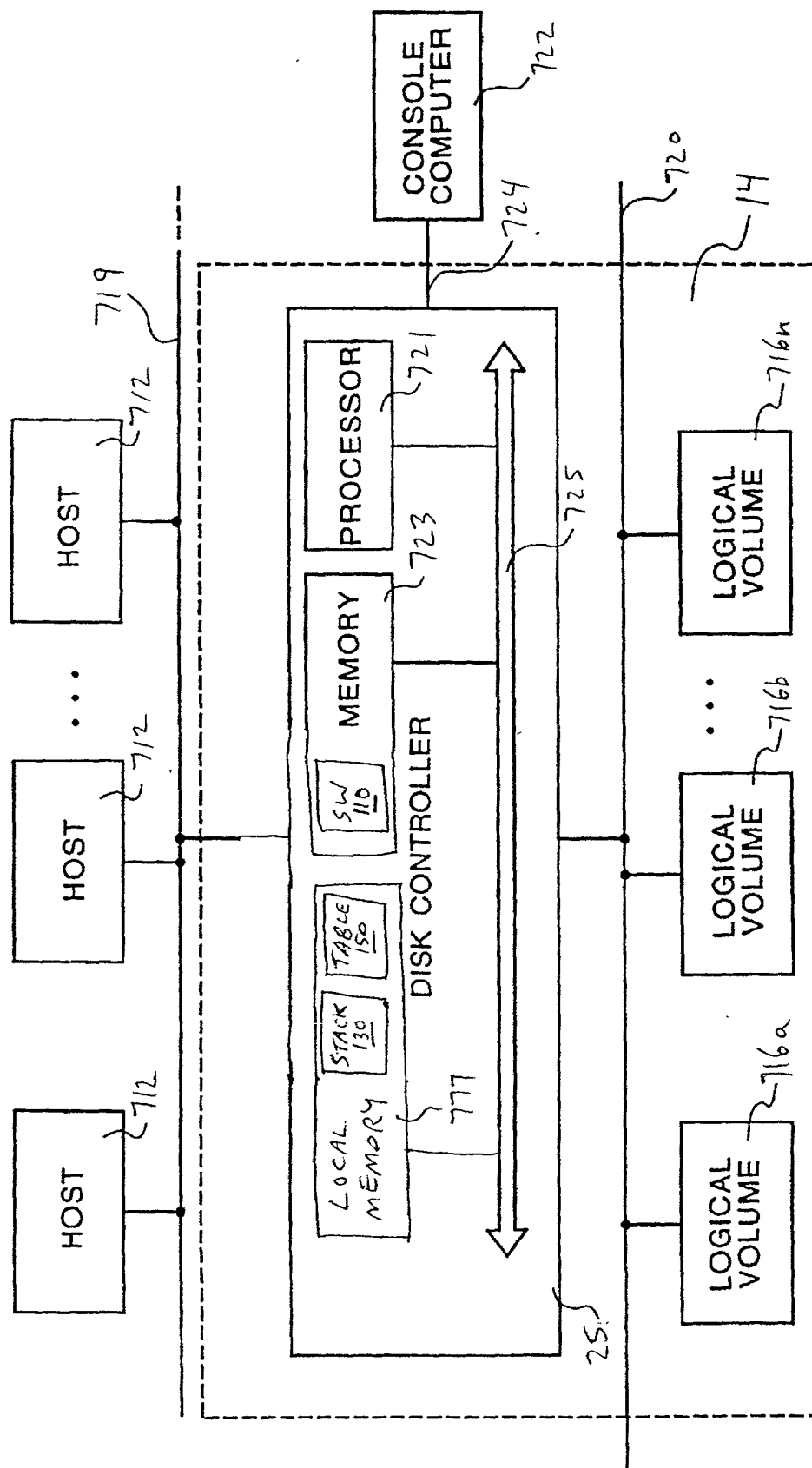


FIG. 1

416.2



1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

```

LOCATE_AT(PROFILE_DATA_area)
EXTERN T_SYMPROF_TABLE_ENTRY symprof_stat_table [SYMPROF_MAX_TABLE_ENTRIES];
END_LOCATION

LOCATE_AT(ICLMM_SYM_PROFILER)
EXTERN T_PROFILER_SETUP_RECORD
EXTERN TCO_PROFILER_RUNTIME_INFO
EXTERN ULONG
EXTERN TCO_SYMPROF_STACK_FRAME
END_LOCATION

profilerSetupTable [PROFILER_RANGES_Q];
runtimeInfo;
symprof_stack_index; /* index into the profiler stack frame */
symprof_stack_base [MAX_NUMBER_OF_SYM_PROF_STACK_FRAMES];

```

```

typedef enum
{
    PROFILER_MODE_UNDEFINED = 0,
    PROFILER_MODE_PROFILING = 1,
    PROFILER_MODE_TRACING = 2,
    PROFILER_MODE_ONCE = 3
} T_PROFILER_MODE;

```

FIG. 3

# T\_SYMPROF\_TABLE\_ENTRY

310 ↙

MSB

|                            |     |  |
|----------------------------|-----|--|
| Self Time (64 bits)        |     | 314  |
| Total Time (64 bits)       |     | 316  |
| Number of calls (64 bits)  |     | 318  |
| Function Address (32 bits) | 312 | Profiler instruction address (32 bits) 320 |

LSB

FIG. 4

410  
↙

# T\_SYMPROF\_STACK\_FRAME

| MSB  |                          | LSB        |                              |
|------|--------------------------|------------|------------------------------|
| 0x00 | Return address           | <u>412</u> | Table entry index <u>414</u> |
| 0x08 | Entry time <u>416</u>    |            |                              |
| 0x10 | Re-entry time <u>418</u> |            |                              |
| 0x18 | Self time <u>420</u>     |            |                              |

FIG. 5

upper portion of the stack may be used to store the return address of the function being profiled. The return address may be stored in the return address field of the header.

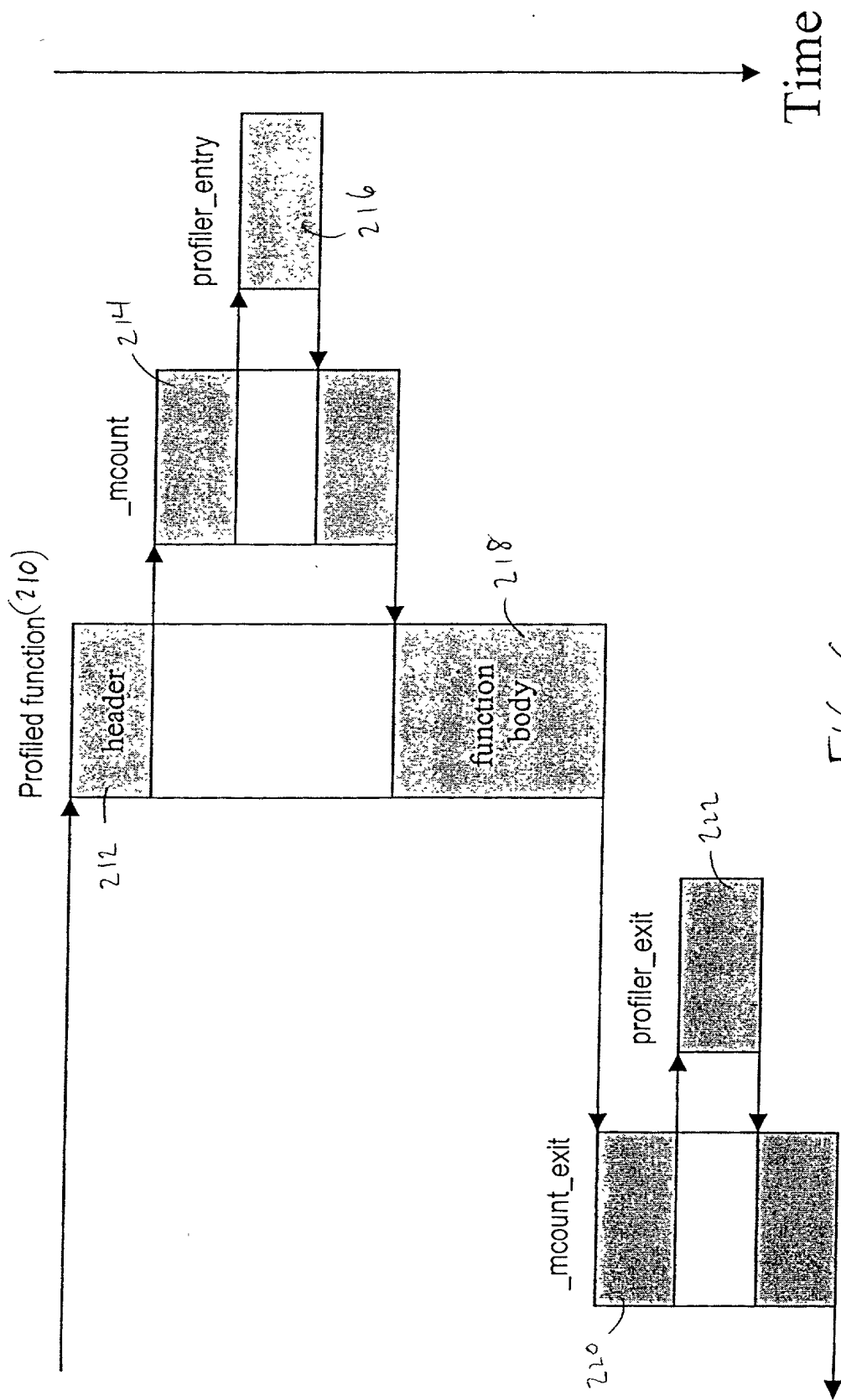


FIG. 6

F16.7

```

void profiler_entry (T_SYMPROF_TABLE_ENTRY* self_entry, ULONG* params_p)
{
    UINT64 time_now = getTimeBase(); /* Take a snapshot of the current time */

    /* Stop the profiler if we are over the time limit */
    if (runtimeInfo.timeLimit &&
        ((cu_timer - runtimeInfo.startTime) > runtimeInfo.timeLimit))
    {
        /* Over the time limit - stop the profiler */
        BIT_CLEAR(B_SYMPROF_ON, runtimeInfo.flags);
        runtimeInfo.stopTime = cu_timer;
    }

    /* Start the timer for the function being profiled (self) and reset the
       self total time */

    symprof_stack_base[symprof_stack_index].entry_time = time_now;
    symprof_stack_base[symprof_stack_index].reentry_time = time_now;
    symprof_stack_base[symprof_stack_index].self_time = 0;

    /* Set the index to which this stack frame refers */
    symprof_stack_base[symprof_stack_index].table_entry = (ULONG) self_entry;

    /* Stop the timer of the parent function (parent) */
    if (symprof_stack_index != 0)
    {
        /* We are not at top level of the profiler stack - compute the total
           time spent in the parent since last reentry to the parent */

        symprof_stack_base[symprof_stack_index-1].self_time +=
            time_now - symprof_stack_base[symprof_stack_index-1].reentry_time;
    }

    /* Increment self counter */
    self_entry->calls++;

    /* Push self stack frame on profiler stack, check for overflow */
    if (++symprof_stack_index >= MAX_NUMBER_OF_SYM_PROF_STACK_FRAMES)
    {
        /* Profiler stack overflow: disable profiling */
        BIT_CLEAR(B_SYMPROF_ON, runtimeInfo.flags);
        runtimeInfo.stopTime = cu_timer;
    }

    if (runtimeInfo.mode == PROFILER_MODE_TRACING)
    {
        traceRoutineEntry (self_entry->functionAddr, params_p);
    }
}

```

FIG. 8



```

void profiler_exit (ULONG* params_p)
{
    T_SYMPROF_TABLE_ENTRY* self_entry;
    UINT64 time_now = getTimeBase (); /* Take a snapshot of the current time */

    /* Pop the calling function's stack frame from profiler's stack */
    symprof_stack_index--;

    /* Update the re-entry time of the parent function */
    if (symprof_stack_index != 0)
    {
        /* We are not at top level of the profiler stack - store the reentry
           time of the parent function */
        symprof_stack_base[symprof_stack_index-1].reentry_time = time_now;
    }

    /* Don't update the entry if the profiler is off */
    if (BIT_IS_CLEAR(B_SYMPROF_ON, runtimeInfo.flags))
    {
        return;
    }

    /* Update the current function's profiler table entry */
    self_entry = (T_SYMPROF_TABLE_ENTRY *)
        symprof_stack_base[symprof_stack_index].table_entry;

    self_entry->self_time +=
        TimeBase2Micros(time_now -
            symprof_stack_base[symprof_stack_index].reentry_time +
            symprof_stack_base[symprof_stack_index].self_time);

    self_entry->total_time +=
        TimeBase2Micros(time_now -
            symprof_stack_base[symprof_stack_index].entry_time);

    if (runtimeInfo.mode == PROFILER_MODE_TRACING)
    {
        traceRoutineExit (self_entry->functionAddr, params_p);
    }

    if (runtimeInfo.mode == PROFILER_MODE_ONCE)
    { /* Disable profiling by replacing "bla_mcount" with "br .+8" */
        insertInstruction ((ULONG *)self_entry->profilerInstructionAddr,
            PPC_B_LOCATION_PLUS_8_INSTR);
    }
}

```

FIG. 9



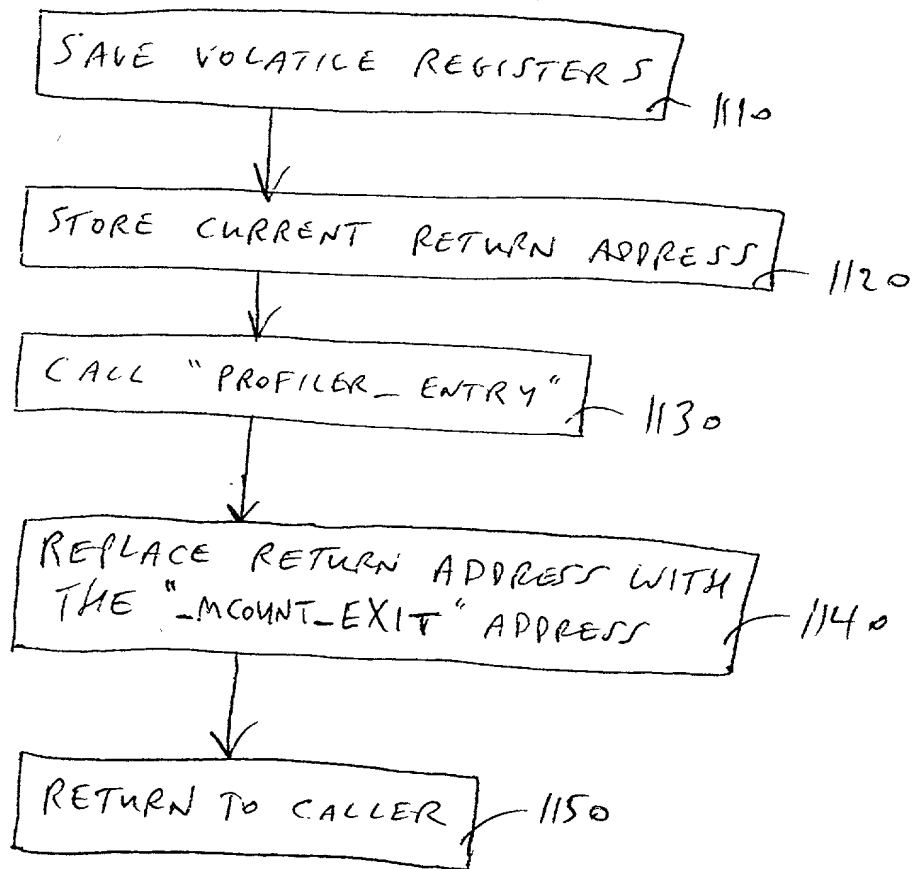


FIG. 11

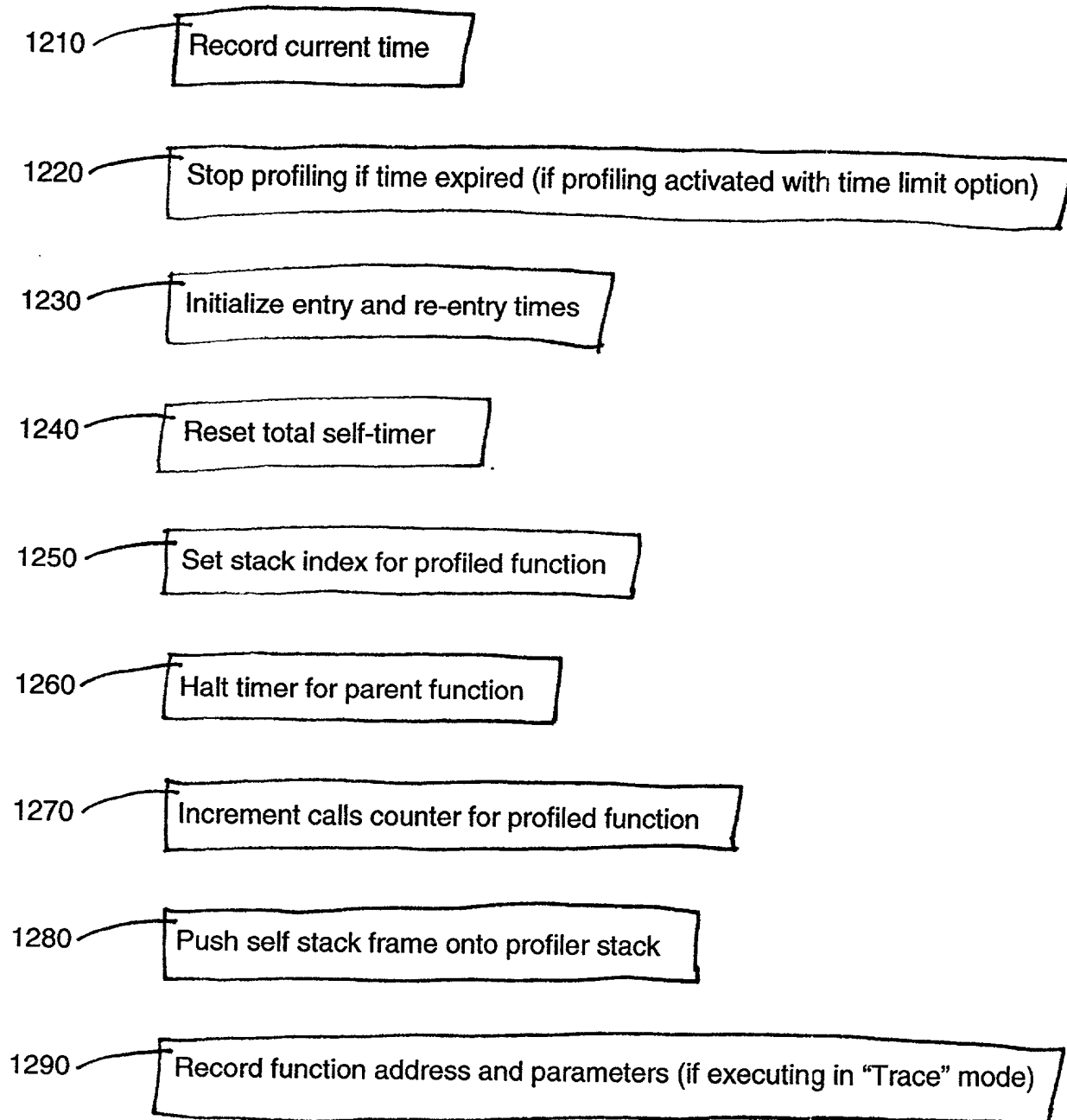


FIG. 12

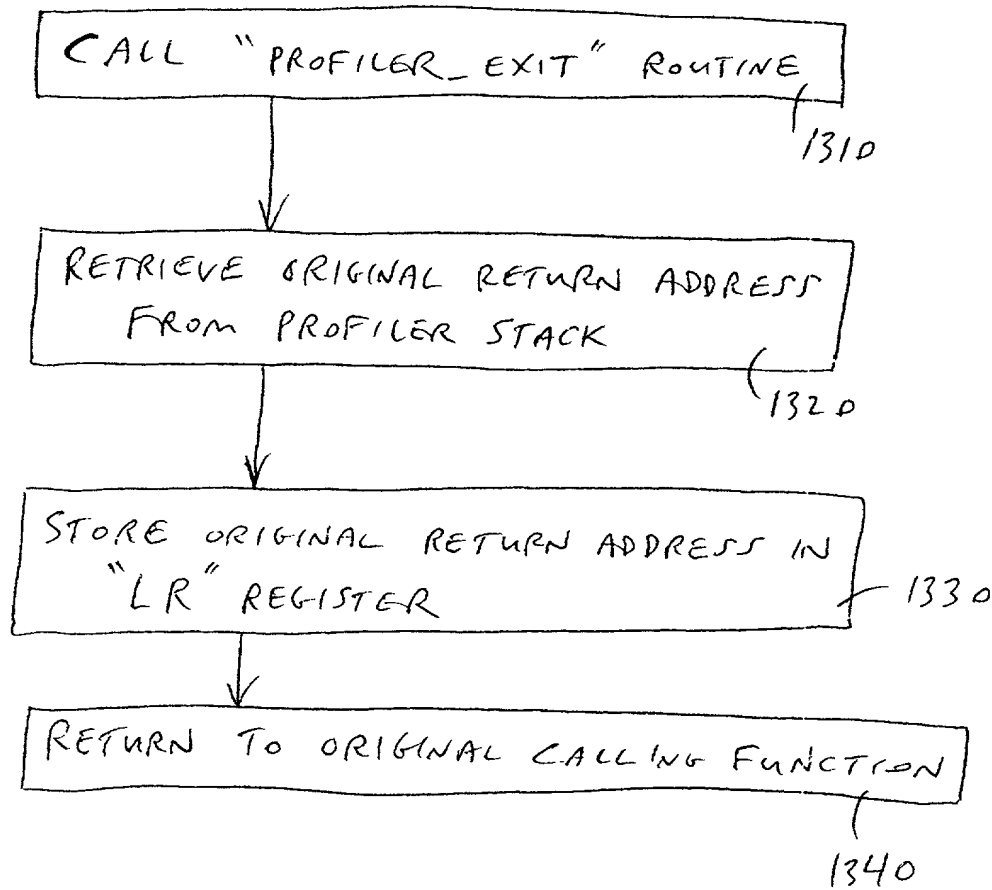


FIG. 13

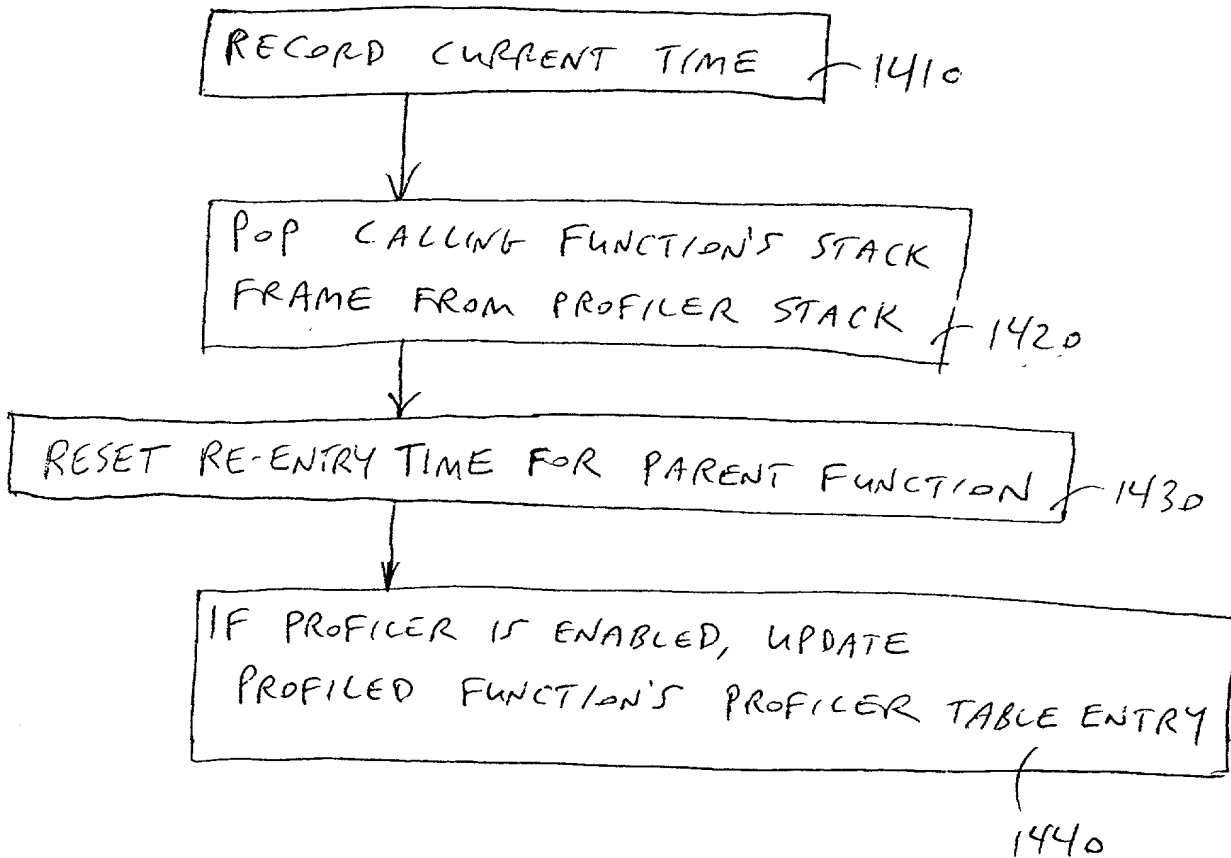


FIG. 14

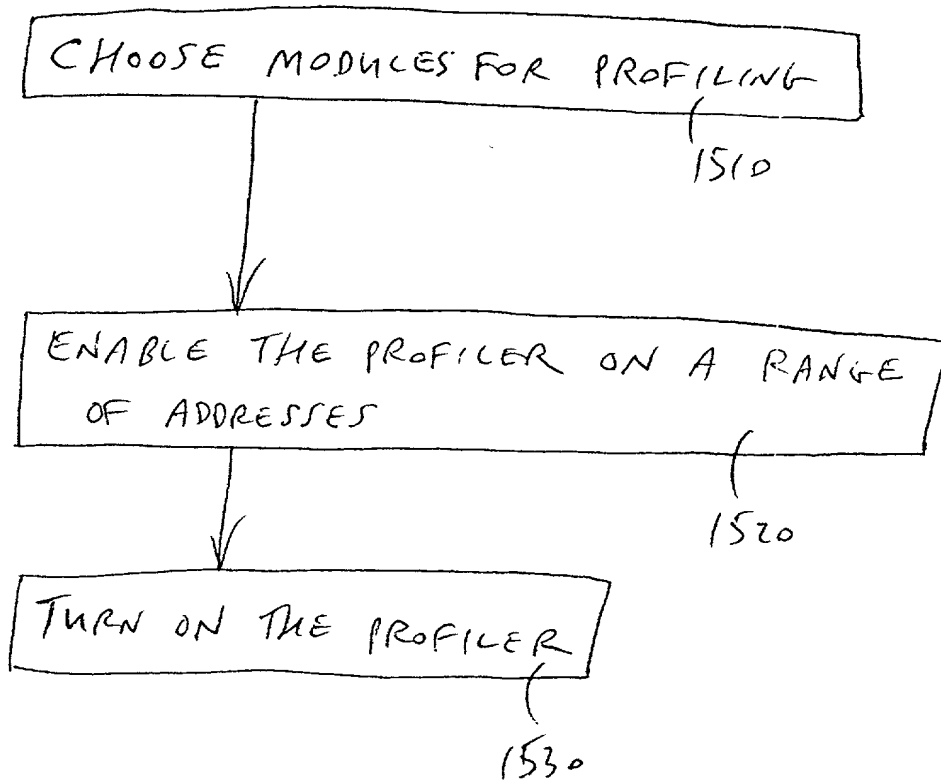


FIG. 15

Utility 83 -- Sym-Profiler : TIME: SEP/30/01 18:13:37

UTILITY 83 -- Sym-Profiler : TIME: SEP/30/01 18:13:37

83, [HELP | AAAA], [STUP | EXEC | DISP] - Display help page  
STUP - Setup  
EXEC - Runtime control  
DISP - Display statistics

P in prompt - Profiler in ON  
Event trace message: 0xd3

FIG. 16A



UTILITY 83 -- Sym-Profiler : TIME: SEP/30/01 18:16:4

----- Profiler Setup -----  
83, DEF, <range number>, <start-addr>, <end-addr>, <flags>  
Add to <flags>: 0x1 - symbolic addr range  
                  0x2 - multi-module range, p6 and p7 = name of end module  
83, [C | D | E], <ranges bitmap> - Clear, Disable, Enable ranges per bitmap  
83, EE  
83, DD, <start range>, <flags> - Restore setup from NVD  
                                  - Display profiler setup  
Add to <flags>: 0x1 - display from NVD  
83, DRAW, <ranges bitmap>, <flags> - Display profiler setup in raw mode  
Add to <flags>: 0x1 - display from NVD

F16. 16 B

-----  
83,0

UTILITY 83 -- Sym-Profiler : TIME: SEP/30/01 18:19:0  
-----

-----  
83,CA  
83,1,<mode>,<time>] - Clear profiler statistics  
                          - Start profiling (optionally stop after <time> seconds)  
                          TRAC - Tracing  
                          PROF - Profiling  
                          ONCE - Do once then disable (per function)  
83,0  
                          - Stop profiling

FIG. 16C

83, AF, 0, <function address> - Display statistics for one function  
 83, AF, 1, <module-name>, <module-name>, <offset> specify function as  
 module+offset  
 83, AF, 1, <module-name>, <module-name>, 1 - Display statistics for all functions  
 in module  
 83, AA, <ranges bitmap> - Display all functions in range  
 83, A0, <ranges bitmap> - Display functions in range which were not called  
 83, A1, <ranges bitmap> - Display functions in range which were called

UTILITY 83 -- Sym-Profiler : TIME: SEP/30/01 18:20:1  
 -----

```

----- Profiler Display -----
83,A,<skip>,<lines>,<key>,<order> - Display statistics
<skip> - Number of entries to skip before starting display
<lines> - Number of lines to display in page (default is 16)

<key>='CALL' - Rank statistics by number of calls
          'SELF' - Rank statistics by function time alone (no descendant time)
          'TOTL' - Rank statistics by total function time
          'SEAV' - Rank statistics by function time (average)
          'TOAV' - Rank statistics by total function time (average)
          <order>= [ASCE | DESC] - Rank statistics in ascending/descending order
83,AF,0,<function address> - Display statistics for one function
83,AF,1,<module-name>,<module-name>,<offset> specify function as
module+offset
83,AF,1,<module-name>,<module-name>,1 - Display statistics for all functions
in module
83,AA,<ranges bitmap> - Display all functions in range
83,A0,<ranges bitmap> - Display functions in range which were not called
83,A1,<ranges bitmap> - Display functions in range which were called
  
```

FIG. 16 D

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

-----  
Start time: 10:56:01 OCT/01/01 0a587783  
Stop Time: 11:01:11 OCT/01/01 0a5879ee  
Run Time : 0d 00h 05m 09s

DA- 16a : PS5 IMPL MONITOR > 83,0

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 11:01:11

-----  
Profiler: OFF

Start time: 10:56:01 OCT/01/01 0a587783  
Stop Time: 11:01:11 OCT/01/01 0a5879ee  
Run Time : 0d 00h 05m 09s

FIG. 18

[illegible]

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 11:14:37

Profiler: ON, MODE: Profiling

Start time: 11:06:59 OCT/01/01 0a587ca6  
Run Time : 0d 00h 07m 38s

| Routine        |         | Number of<br>calls | Time (micros) |       | Average time (micros) |       | % time |       |   |
|----------------|---------|--------------------|---------------|-------|-----------------------|-------|--------|-------|---|
| Module/Offset  | Address |                    | Self          | Total | Self                  | Total | Self   | Total |   |
| thermal_+00170 | 49e22c  | 1                  | 87911         |       | 87911                 |       | 87911  | 0     | 0 |
| thermal_+001a0 | 49e25c  | 4                  | 57332         |       | 57332                 |       | 14333  | 0     | 0 |
| thermal_+00004 | 49e0c0  | 3                  | 483           |       | 483                   |       | 161    | 0     | 0 |

Min stack pointer = 0082fba8 at 0049e0c0, stack available = 0002fba8 bytes

FIG. 19A

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 14:54:30

-----  
Profiler: ON, MODE: Profiling

Start time: 14:54:23 OCT/01/01 0a58e73e  
Run Time : 0d 00h 00m 07s

| Routine<br>Module/Offset Address   | Number of<br>calls | Time (micros) |         | Average time (micros) |       | % time<br>Self Tot. |
|--|--------------------|---------------|---------|-----------------------|-------|---------------------|
|  |                    | Self          | Total   | Self                  | Total |                     |
| daschedu+01cc0 3641d0  | 44501              | 226182        | 5145138 | 5                     | 115   | 3                   |
| daschedu+00ad8 362fe8  | 32752              | 98552         | 3948230 | 3                     | 120   | 1                   |
| dawrites+00004 267ec0  | 32752              | 1593660       | 3849616 | 48                    | 117   | 22                  |
| dawrites+016c0 26957c  | 127683             | 1400634       | 2053441 | 10                    | 16    | 20                  |
| dawrites+012d0 26918c  | 488521             | 515448        | 605265  | 1                     | 1     | 7                   |
| daschedu+01048 363558  | 46165              | 402229        | 467912  | 8                     | 10    | 5                   |
| daschedu+01598 363aa8  | 44501              | 205113        | 455331  | 4                     | 10    | 2                   |
| daschedu+007dc 362cec  | 11804              | 19880         | 447482  | 1                     | 37    | 0                   |
| daprefch+03788 2641d0  | 11804              | 23263         | 429399  | 1                     | 36    | 0                   |
| daprefch+01d0c 262754  | 11804              | 74382         | 376237  | 6                     | 31    | 1                   |
| daprefch+01fa8 2629f0  | 46916              | 283656        | 309941  | 6                     | 6     | 4                   |
| daschedu+00004 362514  | 44501              | 173907        | 205722  | 3                     | 4     | 2                   |
| da_utils+02858 2f1468  | 44339              | 163917        | 163917  | 3                     | 3     | 2                   |
| dawrites+00dd4 268c90  | 133836             | 133836        | 133836  | 1                     | 1     | 1                   |
| dawrites+00728 2685e4  | 41789              | 124541        | 125498  | 2                     | 3     | 1                   |
| daschedu+00e04 363314  | 2521               | 109413        | 109413  | 43                    | 43    | 1                   |
| Min stack pointer = 0082f260 at 0026c4f4, stack available = 0002f260 bytes |                    |               |         |                       |       |                     |

DA- 2a : P@sS5 DISK SUBSYSTEM:>

Set-Up-Time: OCT/01/01 14:56:17 Stop-Trigger: FFFFFFFF Phase: COLLECT  
Collect-Time: OCT/01/01 14:56:17 GM Reject: 0(0)/0  
Util 97 Info - Setup Time: OCT/01/01 13:22:25

DONE.

DA- 2a : P.sS5 DISK SUBSYSTEM:>

FIG. 19B

[illegible]

Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 01a -> PC (Unknown)

Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 15a -> PC (Unknown)Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 01b -> PC (Unknown)

Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 16a -> PC (Unknown)

```
Util_end: 00000000 msgid=CEFABEBA
10/01/01 15:22:06 16d -> PC (Unknown)
```

Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 16b -> PC (Unknown)

Util\_End: 00000000 msgid=CEFABEBA  
10/01/01 15:22:06 16c -> PC (Unknown)

Util\_end: 00000000 msgid=CEFABEBA  
10/01/01 15:23:03 02b -> PC (Unknown)

OCT/01/01 14:57:17 CONTROL STORE TEST....01 add(00080000) .....PASSED.

DA- 2b : .S5 DISK SUBSYSTEM:>  
10/01/01 15:23:20 01b -> PC (Unknown)

OCT/01/01 14:57:34 CONTROL STORE TEST...01 add(00080000) .....PASSED.

DA- 1b : .s5 DISK SUBSYSTEM:>  
10/01/01 15:24:03 01a -> PC (Unknown)

F/G. 19C



DA- 1a : .s55 DISK SUBSYSTEM:>  
 10/01/01 15:26:48 02b -> PC (Unknown)  
 pErrorResp [85.5F16.06] at 10/01/2001 3:26:48 PM  
 10/01/01 15:26:48 01a -> PC (Unknown)

DA- 1a : .s55 DISK SUBSYSTEM:>  
 10/01/01 15:30:09 Manual Inlines command sent: 83,A  
 10/01/01 15:30:09 PC (INLINES) -> 02a,,

Command to dir 02a: [83,A,] msgid=552A05  
 10/01/01 15:30:09 02a -> PC (INLINES)

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 15:04:23

Profiler: ON, MODE: Profiling

Start time: 14:54:23 OCT/01/01 0a58e73e  
 Run Time : 0d 00h 10m 00s

| Routine<br>Module/Offset | Address | Number of<br>calls | Time (micros) |           | Average time (micros) |       | % time |    |
|--------------------------|---------|--------------------|---------------|-----------|-----------------------|-------|--------|----|
|                          |         |                    | Self          | Total     | Self                  | Total |        |    |
| daschedu+01cc0           | 3641d0  | 2522952            | 12991240      | 329169241 | 5                     | 130   | 2      | 54 |
| daschedu+00ad8           | 362fe8  | 2055489            | 6183238       | 262200235 | 3                     | 127   | 1      | 43 |
| dawrites+00004           | 267ec0  | 2055489            | 109371204     | 256003627 | 53                    | 124   | 18     | 42 |
| dawrites+016c0           | 26957c  | 6998173            | 85742065      | 126349753 | 12                    | 18    | 14     | 21 |
| dawrites+012d0           | 26918c  | 31979335           | 30528363      | 34969248  | 0                     | 1     | 5      | 5  |
| daschedu+01048           | 363558  | 2685627            | 24248920      | 28323741  | 9                     | 10    | 4      | 4  |
| daschedu+01598           | 363aa8  | 2522952            | 11494217      | 26585146  | 4                     | 10    | 1      | 4  |
| da_copyt+02970           | 37b428  | 2652               | 35059         | 14419079  | 13                    | 5437  | 0      | 2  |
| daschedu+007dc           | 362cec  | 387932             | 702492        | 13111048  | 1                     | 33    | 0      | 2  |
| daschedu+00004           | 362514  | 2522952            | 10933652      | 12611157  | 4                     | 4     | 1      | 2  |
| daprefch+03788           | 2641d0  | 387932             | 820965        | 12478041  | 2                     | 32    | 0      | 2  |
| daprefch+01d0c           | 262754  | 387932             | 2333514       | 11458184  | 6                     | 29    | 0      | 1  |
| daschedu+00828           | 362d38  | 54643              | 363880        | 10799259  | 6                     | 197   | 0      | 1  |
| daschedu+00a10           | 362f20  | 7919               | 812005        | 10421421  | 102                   | 1316  | 0      | 1  |

FIG. 19D

da\_task+00004 373224 | 3503 | 50487 | 9518913 | 14 | 2717 | 0 | 1 |  
dawrites+00728 2685e4 | 2723405 | 9344426 | 9422713 | 3 | 3 | 1 | 1 |  
Min stack pointer = 00825370 at 002a6450, stack available = 00025370 bytes

DA- 2a : P.sS5 DISK SUBSYSTEM:>  
Util\_end: 00000000 msgid=552A05  
10/01/01 15:31:47 15a -> PC (Unknown)

OCT/01/01 15:06:01 CONTROL STORE TEST...01 add(00080000) .....PASSED.  
10/01/01 15:32:03 16a -> PC (Unknown)

OCT/01/01 15:06:17 CONTROL STORE TEST...01 add(00080000) .....PASSED.  
10/01/01 15:33:55 15b -> PC (Unknown)

OCT/01/01 15:08:09 CONTROL STORE TEST...01 add(00080000) .....PASSED.  
10/01/01 15:34:01 02a -> PC (INLINES)  
ptErrorResp [85.5F16.06] at 10/01/2001 3:34:01 PM  
10/01/01 15:34:01 01a -> PC (Unknown)

DA- 1a : .sS5 DISK SUBSYSTEM:>  
10/01/01 15:34:17 16b -> PC (Unknown)

OCT/01/01 15:08:31 CONTROL STORE TEST...01 add(00080000) .....PASSED.  
10/01/01 15:34:58 Closing Inlines  
10/01/01 15:35:03 Opening Inlines, user: , group: PC group  
10/01/01 15:35:17 Manual Inlines command sent: 83,AAAA  
10/01/01 15:35:17 PC (INLINES) -> 01a,,

Command to dir 01a: [83,AAAA,] msgid=552C05  
10/01/01 15:35:17 01a -> PC (INLINES)

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 15:09:31  
-----

83, [HELP | AAAA], [STUP | EXEC | DISP | DISP] - Display help page  
STUP - Setup

Fig. 19E

EXEC - Runtime control  
DISP - Display statistics

P in prompt - Profiler in ON  
Event trace message: 0xd3

DA- 1a : .sS5 DISK SUBSYSTEM:>  
Util\_end: 00000000 msgid=552C05  
10/01/01 15:35:22 Manual Inlines command sent :  
10/01/01 15:35:22 PC (INLINES) -> 01b,,

Command to dir 01b: . msgid=552D05  
10/01/01 15:35:22 01b -> PC (INLINES)

NON HEX CHAR

DA- 1b : .sS5 DISK SUBSYSTEM:>  
10/01/01 15:35:26 Manual Inlines command sent :  
10/01/01 15:35:26 PC (INLINES) -> 02a,,

Command to dir 02a: . msgid=552E05  
10/01/01 15:35:26 02a -> PC (INLINES)

NON HEX CHAR

DA- 2a : P.sS5 DISK SUBSYSTEM:>  
10/01/01 15:35:31 Manual Inlines command sent: 83,A  
10/01/01 15:35:31 PC (INLINES) -> 02a,,

Command to dir 02a: [83,A,] msgid=552F05  
10/01/01 15:35:32 02a -> PC (INLINES)

UTILITY 83 -- Sym-Profiler : TIME: OCT/01/01 15:09:45

-----  
Profiler: ON, MODE: Profiling

Fig. 19F

14:54:23 OCT/01/01 0a58e73e  
 Run Time : 0d 00h 15m 22s

Start time: 14:54:23 OCT/01/01 0a58e73e  
 Run Time : 0d 00h 15m 22s

| Routine<br>Module/Offset Address   | Number of<br>calls | Time (micros) |           | Average time (micros) |       | % time |      |
|--|--------------------|---------------|-----------|-----------------------|-------|--------|------|
|  |                    | Self          | Total     | Self                  | Total | Self   | Tot. |
| daschedu+01cc0 3641d0  | 4048572            | 21154575      | 494195505 | 5                     | 122   | 2      | 53   |
| daschedu+00ad8 362fe8  | 3291389            | 9902877       | 385479049 | 3                     | 117   | 1      | 41   |
| dawrites+00004 267ec0  | 3291389            | 158197598     | 375574540 | 48                    | 114   | 17     | 40   |
| dawrites+016c0 26957c  | 9793496            | 127646078     | 187230604 | 13                    | 19    | 13     | 20   |
| dawrites+012d0 26918c  | 47216195           | 44602356      | 51039823  | 0                     | 1     | 4      | 5    |
| daschedu+01048 363558  | 4491138            | 40201730      | 46996117  | 8                     | 10    | 4      | 5    |
| daschedu+01598 363aa8  | 4048572            | 18782025      | 42846503  | 4                     | 10    | 2      | 4    |
| da_copyt+02970 37b428  | 4805               | 80589         | 21817204  | 16                    | 4540  | 0      | 2    |
| daschedu+007dc 362cec  | 746474             | 1320046       | 21643679  | 1                     | 28    | 0      | 2    |
| daprefch+03788 2641d0  | 746474             | 1538576       | 20458191  | 2                     | 27    | 0      | 2    |
| daschedu+00004 362514  | 4048572            | 17360936      | 19983269  | 4                     | 4     | 1      | 2    |
| daprefch+01d0c 262754  | 746474             | 3842503       | 18513306  | 5                     | 24    | 0      | 2    |
| daschedu+00828 362d38  | 94399              | 677156        | 17337392  | 7                     | 183   | 0      | 1    |
| da_copyt+020e4 37ab9c  | 4805               | 1255412       | 17013818  | 261                   | 3540  | 0      | 1    |
| daschedu+00a10 362f20  | 15427              | 1584969       | 16634358  | 102                   | 1078  | 0      | 1    |
| da_rtask+00004 373224  | 11742              | 133494        | 16066053  | 11                    | 1368  | 0      | 1    |
| Min stack pointer = 00823048 at 0049f394, stack available = 00023048 bytes |                    |               |           |                       |       |        |      |

DA- 2a : P.SS5 DISK SUBSYSTEM:>

FIG. 196

Profiler: ON, MODE: Profiling

Start time: 14:54:23 OCT/01/01 0a58e73e  
Run Time : 0d 00h 35m 31s

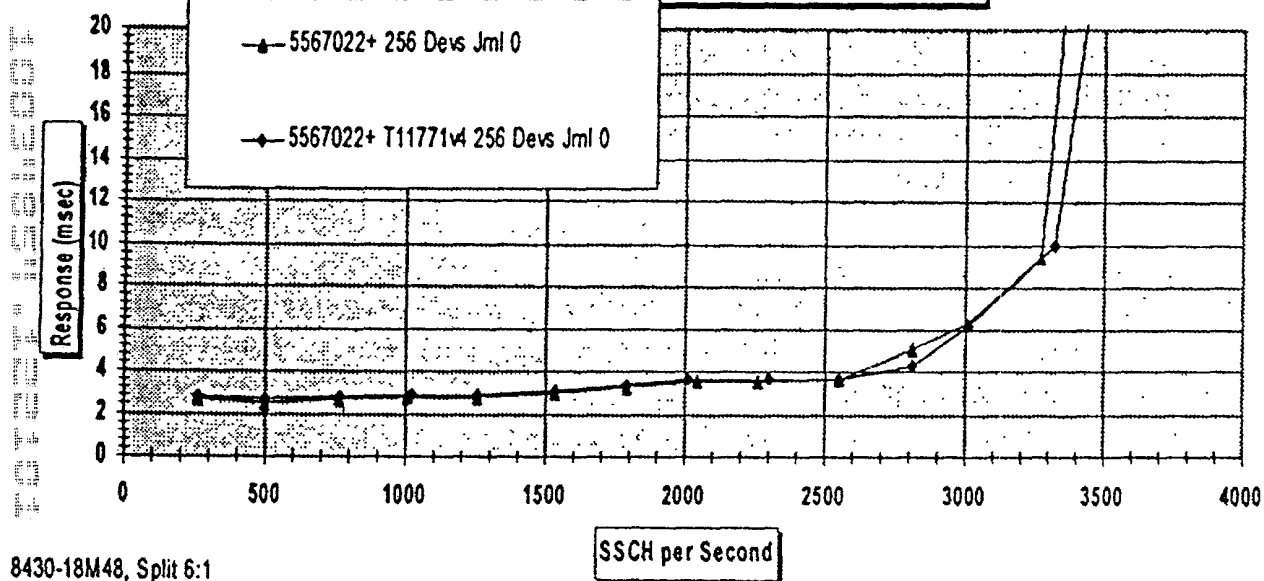
| Routine<br>Module/Offset | Address | Number of<br>calls | Time (micros) |            | Average time (micros) |       | % time |       |
|--------------------------|---------|--------------------|---------------|------------|-----------------------|-------|--------|-------|
|                          |         |                    | Self          | Total      | Self                  | Total | Self   | Total |
| dawrites+00004           | 267ec0  | 8159810            | 379921296     | 906208848  | 46                    | 111   | 17     | 42    |
| dawrites+016c0           | 26957c  | 23194433           | 311286293     | 454524217  | 13                    | 19    | 14     | 21    |
| dawrites+012d0           | 26918c  | 113817075          | 107355424     | 123512544  | 0                     | 1     | 5      | 5     |
| daschedu+01048           | 363558  | 10837699           | 97770758      | 114282199  | 9                     | 10    | 4      | 5     |
| daschedu+01cc0           | 3641d0  | 9992748            | 51666137      | 1170386199 | 5                     | 117   | 2      | 54    |
| daschedu+01598           | 363aa8  | 9992748            | 46125615      | 103420081  | 4                     | 10    | 2      | 4     |
| daschedu+00004           | 362514  | 9992748            | 41495305      | 47383227   | 4                     | 4     | 1      | 2     |
| da_utils+02858           | 2f1468  | 9958730            | 37412992      | 37412992   | 3                     | 3     | 1      | 1     |
| dawrites+00728           | 2685e4  | 10299487           | 33491913      | 33763773   | 3                     | 3     | 1      | 1     |
| daschedu+00e04           | 363314  | 655745             | 28488210      | 28488210   | 43                    | 43    | 1      | 1     |
| daprefch+01fa8           | 2629f0  | 4101228            | 24844129      | 27249016   | 6                     | 6     | 1      | 1     |
| daschedu+00ad8           | 362fe8  | 8159810            | 24544745      | 930763270  | 3                     | 114   | 1      | 43    |
| da_copyt+00100           | 378bb8  | 10118              | 23769100      | 25413369   | 2349                  | 2511  | 1      | 1     |
| dawrites+00dd4           | 268c90  | 23484807           | 23485140      | 23485140   | 1                     | 1     | 1      | 1     |
| idle_stt+00080           | 394434  | 10995564           | 21948672      | 21948761   | 1                     | 1     | 1      | 1     |
| cache_rt+03f04           | 26e8e4  | 2313095            | 19836710      | 23451890   | 8                     | 10    | 0      | 1     |

Min stack pointer = 00823048 at 0049f394, stack available = 00023048 bytes

F16, 20

## Front End Write Test

4K Blocks, 100% Write, 100% Write hit, 1 cyl



8430-18M48, Split 6:1

96 Physical, 256 Logical 3390-3

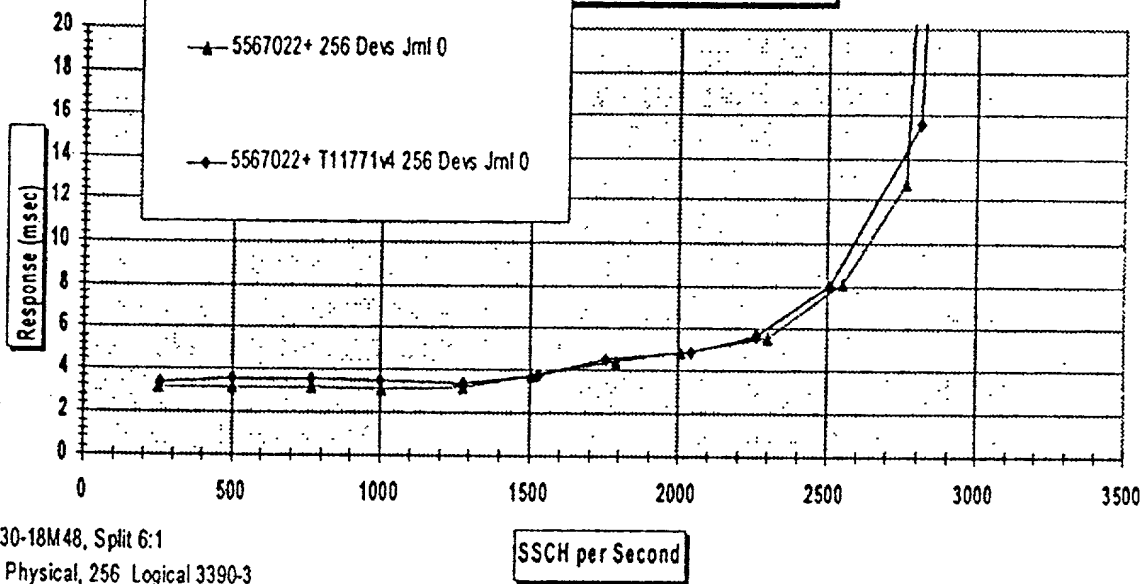
8GB Cache

8 Host Channels

FIG. 21

## Back End Write Test

4K Blocks, 100% Write, 30% Write hit

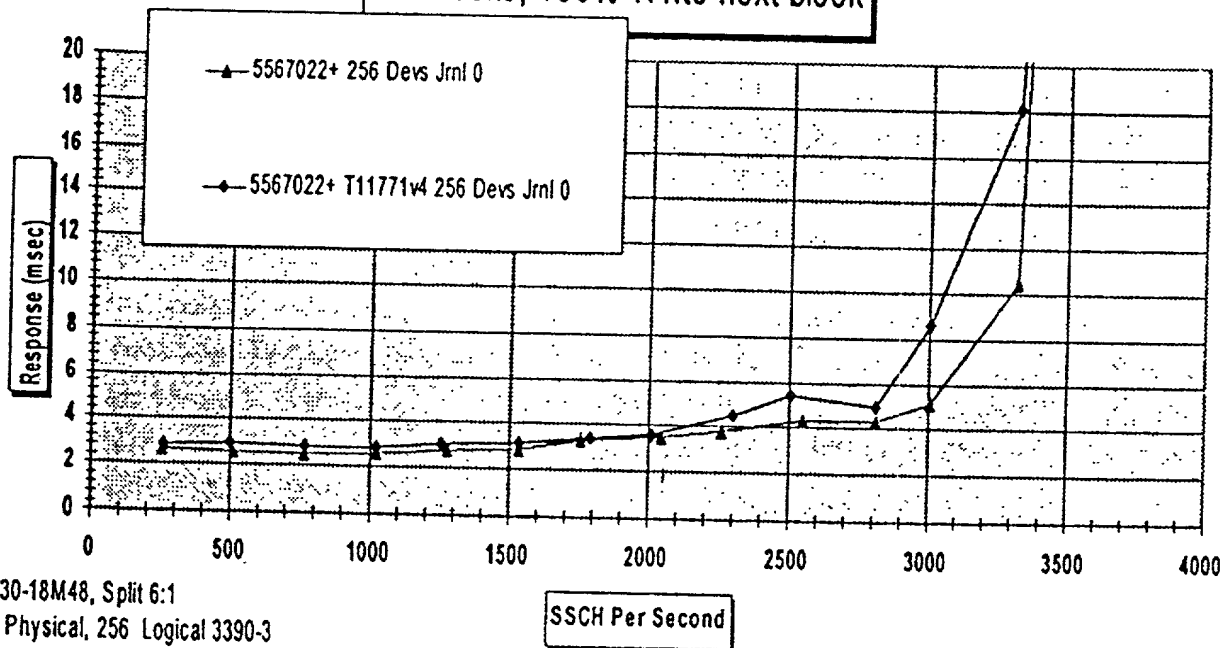


8430-18M48, Split 6:1  
96 Physical, 256 Logical 3390-3  
8GB Cache  
8 Host Channels

FIG. 22

# Sequential Write

4K Blocks, 100% Write next block



8430-18M48, Split 6:1  
96 Physical, 256 Logical 3390-3  
8GB Cache  
8 Host Channels

FIG-23.



# 4K Mixed Environment Uniform Distribution of I/Os 4K Blocks, 25% Write, 70% Cache hit

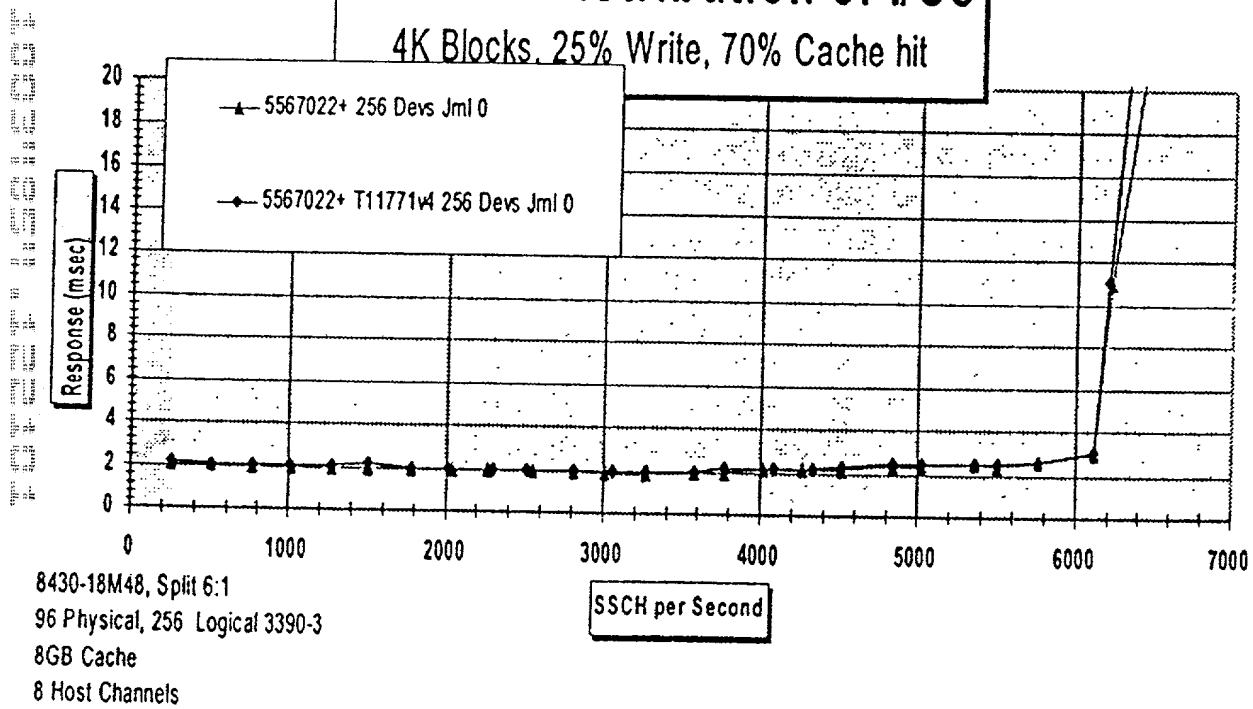
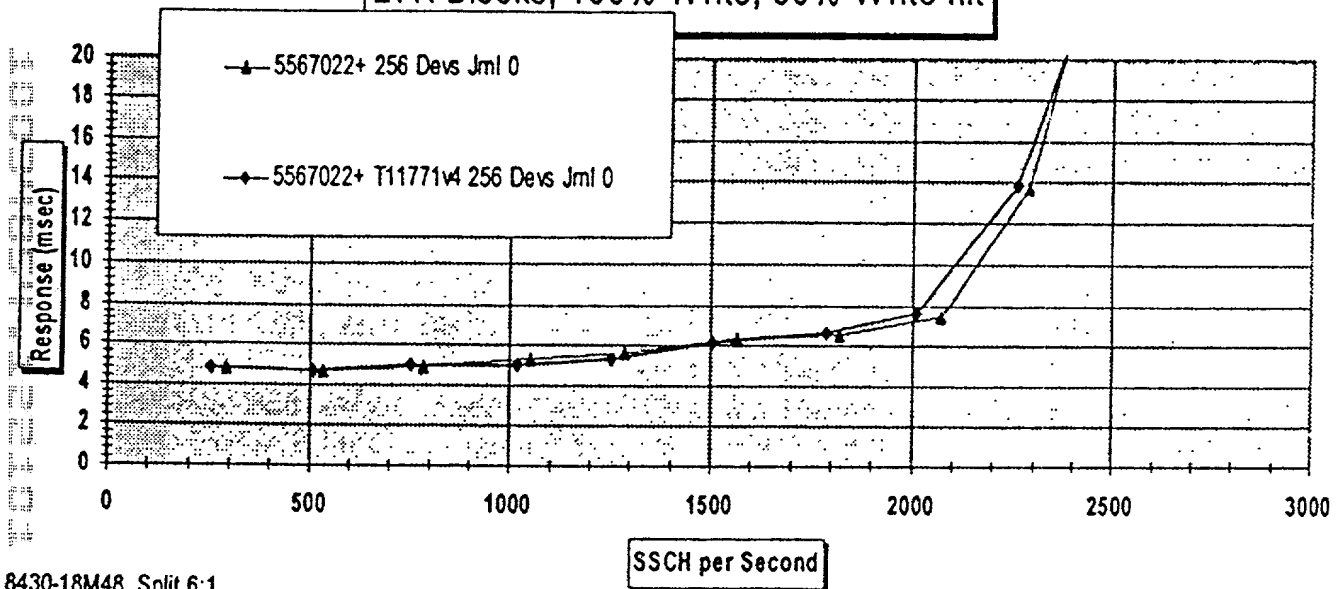


FIG-24

# Back End Write Test

27K Blocks, 100% Write, 30% Write hit



8430-18M48, Split 6:1

96 Physical, 256 Logical 3390-3

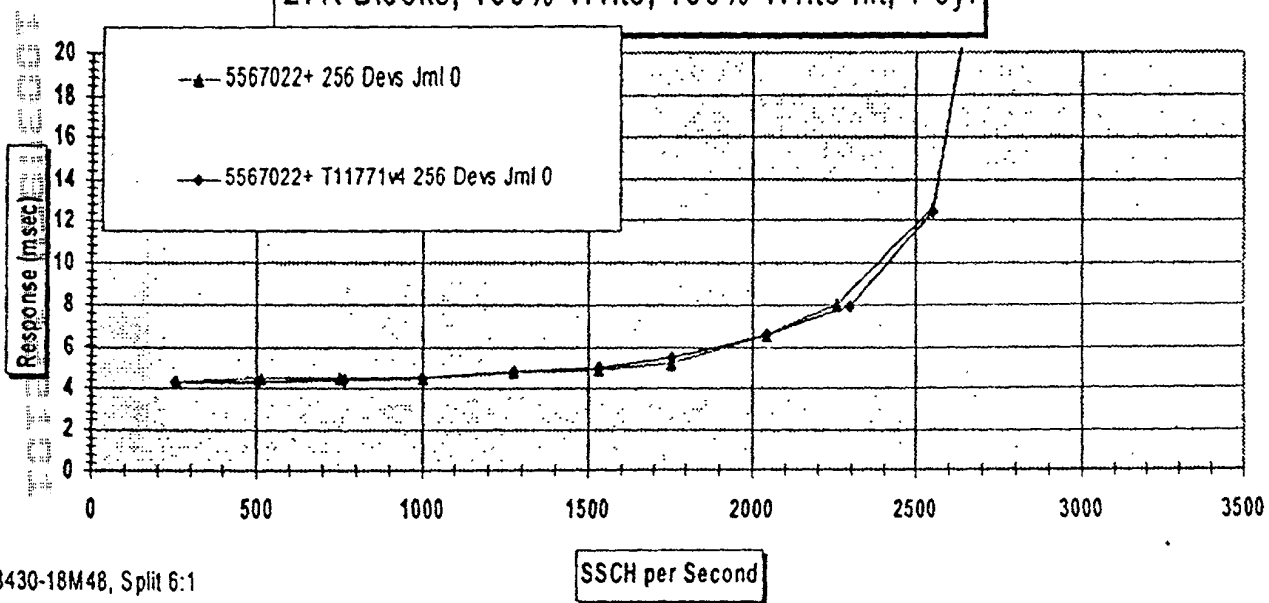
8GB Cache

8 Host Channels

FIG. 25

## Front End Write Test

27K Blocks, 100% Write, 100% Write hit, 1 cyl

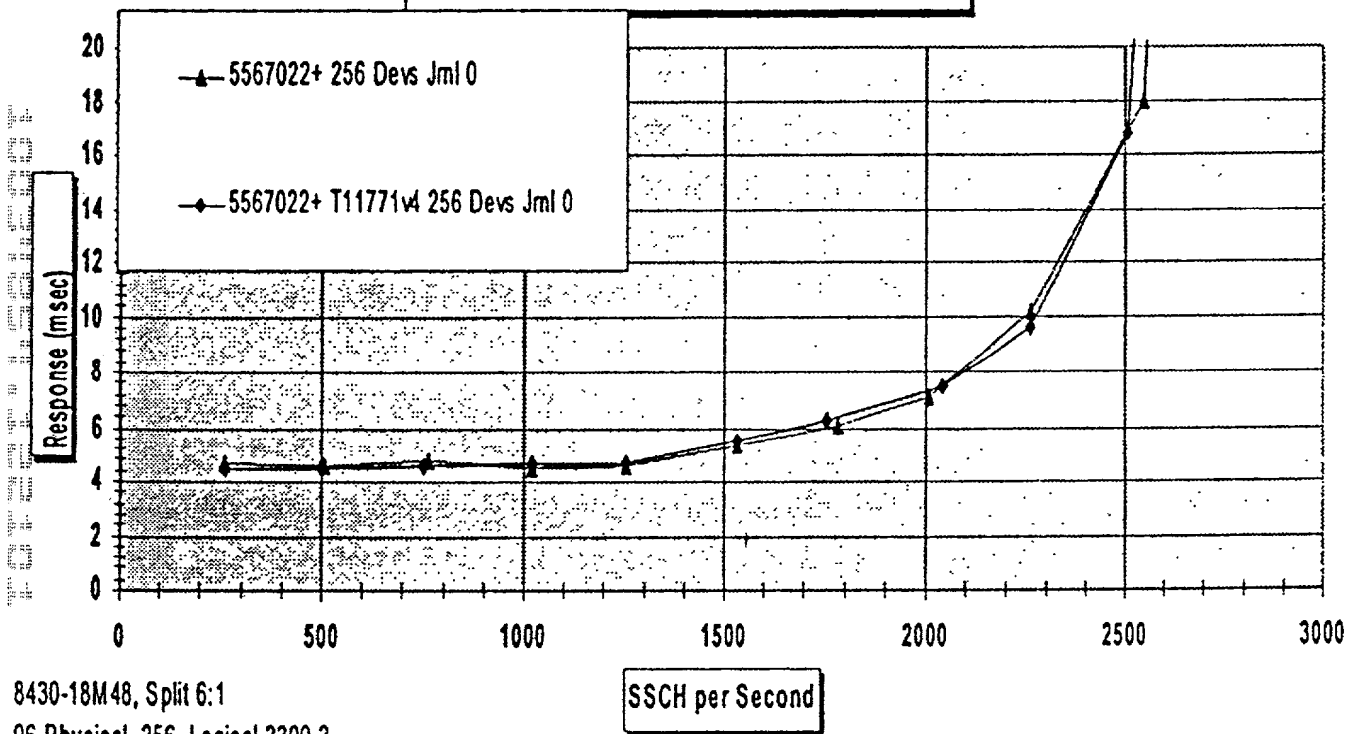


8430-18M48, Split 6:1  
96 Physical, 256 Logical 3390-3  
8GB Cache  
8 Host Channels

FIG. 26

# Sequential Write

27K Blocks, 100% Write next block



8430-18M48, Split 6:1

96 Physical, 256 Logical 3390-3

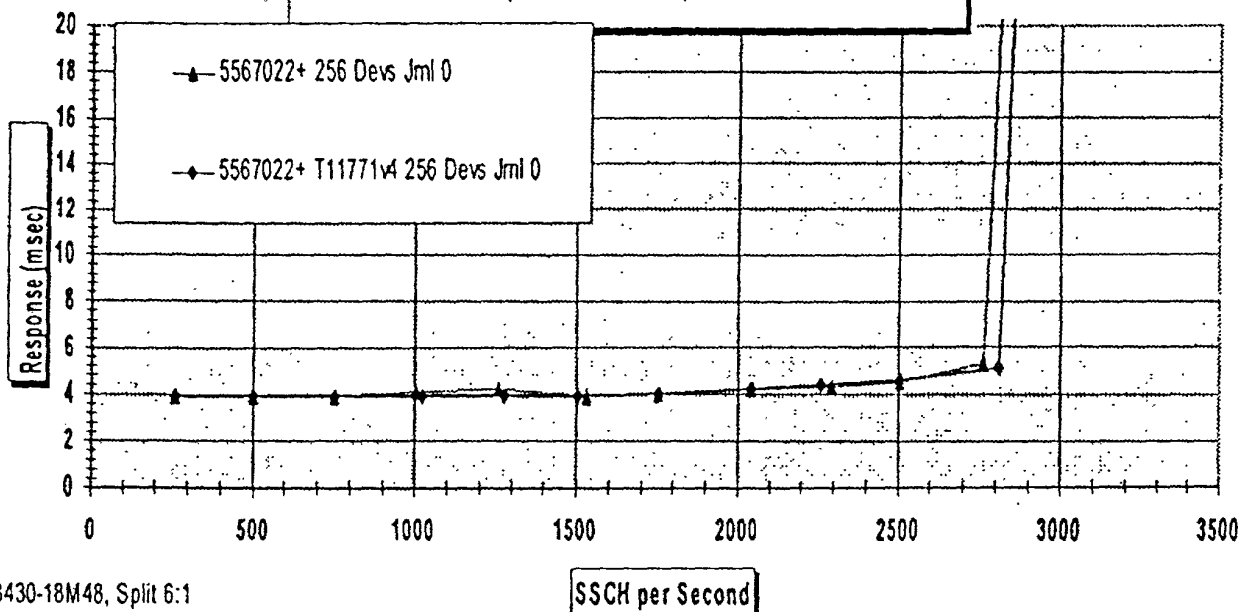
8GB Cache

8 Host Channels

FIG. 27

# Typical Online Environment Uniform Distribution of I/Os

27K Blocks, 25% Write, 70% Cache Hit



8430-18M48, Split 6:1  
96 Physical, 256 Logical 3390-3  
8GB Cache  
8 Host Channels

FIG. 28